

PHOTODEGRADATION OF AFLATOXIN B1 IN  
ORGANIC SOLVENTS USING METAL COATED  
TITANIUM DIOXIDE CATALYSTS

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Solar-radiation degrades aflatoxin B1 in coconut oil leaving no fluorescent or toxic residues. The same treatment in organic solvents produce new fluorescent compounds and aflatoxin B1 is not degraded completely<sup>1</sup>.

Aflatoxin B1 (0.1 ug/ml) in chloroform and dichloromethane containing 1mg/ml of platinum coated titanium dioxide catalyst were exposed to solar radiation, light from 100 watt incandescent lamp and from a 200 watt mercury arc lamp for duration up to 30 min. with the view to increase the efficiency of photo-degradation of aflatoxin B1.

No fluorescent degradation products appeared on irradiation with the catalyst in contrast to earlier irradiation experiments where no catalyst was used. Introduction of the catalyst enhanced degradation by (50-100)% in organic solvents with the three types of radiation used.

The catalyst appeared to photo-oxidize the aflatoxin B1 efficiently leaving no fluorescent degradation products and reducing the time of exposure to radiation required for total disappearance of aflatoxin B1.

References:

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